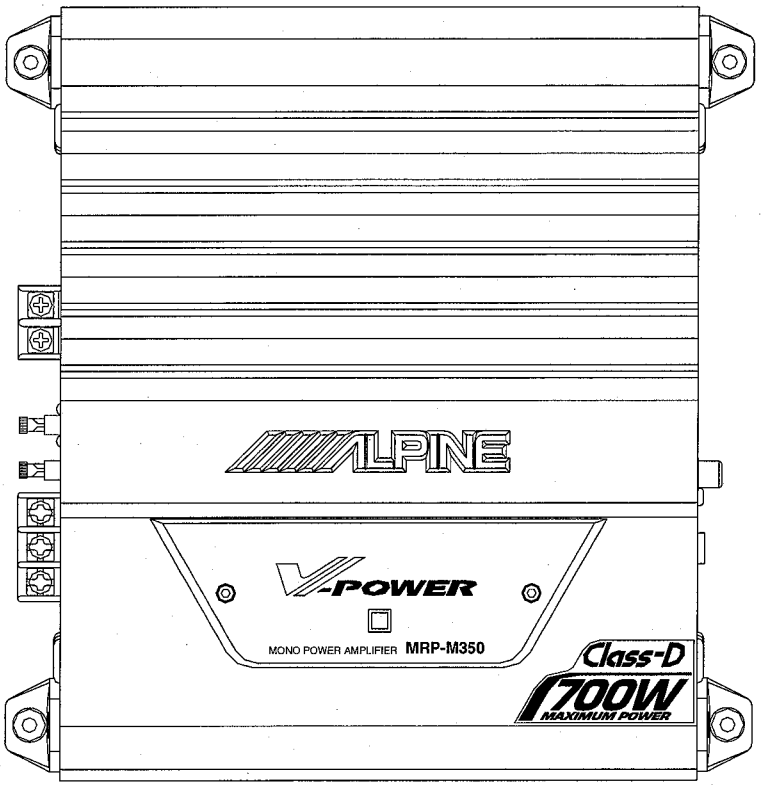
ALPI-00813

ALPINE

SERVICE MANUAL

MONO POWER AMPLIFIER



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MRP-M350

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NOTE : Due to continuing product improvement, specifications and designs are subject to change without notice.

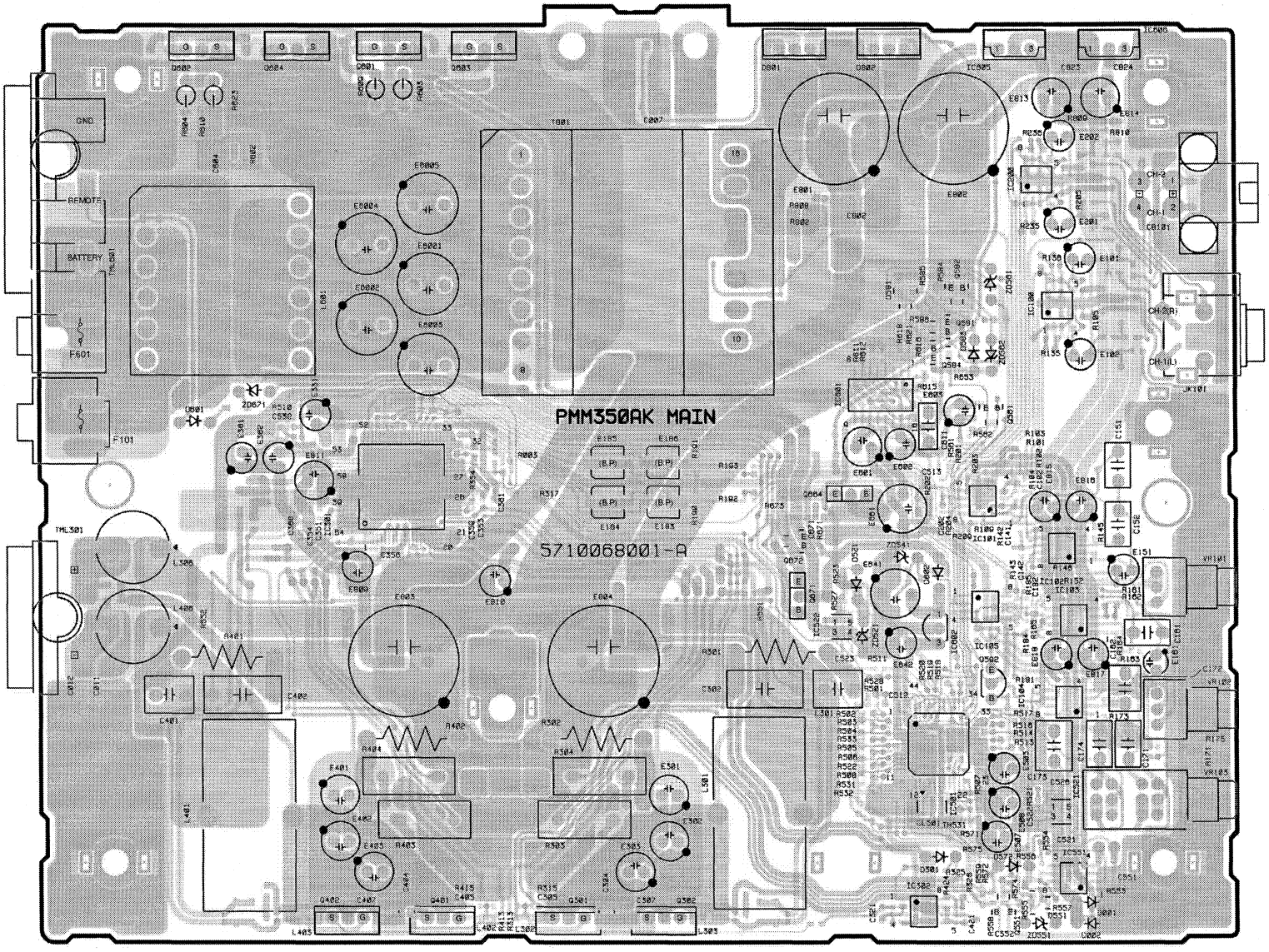
Specifications

T.H.D. (100Hz, 14.4V)	100W/ch, 4ohm-1channel : 1.0%
	200W/ch, 2ohm-1channel : 1.0%
Power Output (1.0% T.H.D., 14.4V, 20Hz to 100Hz)	4ohm-1channel : 160W
	2ohm-1channel : 320W
S/N Ratio (Ref. Output 175W/4ohm, Input shorted)	94dB
Input Sensitivity (175W/4ohm Output)	SP-INPUT : GAIN-VR (MIN) : 8.0V±3dB
	RCA-INPUT : GAIN-VR (MAX) : 0.18V±3dB
	RCA-INPUT : GAIN-VR (MIN) : 4.0V±3dB
Input Impedance	SP-INPUT : 35.9k ohm±10%
	RCA-INPUT : 18.3k ohm±10%
Frequency Response (0dB, Ref. 100Hz)	20Hz : -1.0±1dB
	205Hz : -3.0±2.5dB
Current Drain	No Signal : 1.5A
	2ohm-1channel, 10% T.H.D. : 62A
Residual Noise (Input Shorted, 4ohm-1channel)	30mV
Remote on Voltage (1W Output)	6.5 +1, -1.5V
Remote Current Drain	0.27± 0.1mA
Back Up Current Drain	1.5mA
Fuse Requirement	20A x2 (For Battery Line)
Power Source	DC14.4V (11 to 16V)
Dimensions (W x H x D)	233 x 60 x 242mm
Weight	2.42kg

NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.

Parts Layout on P.W.Boards and Wiring Diagram (1/2)

MAIN P.W.Board (Component Side View)



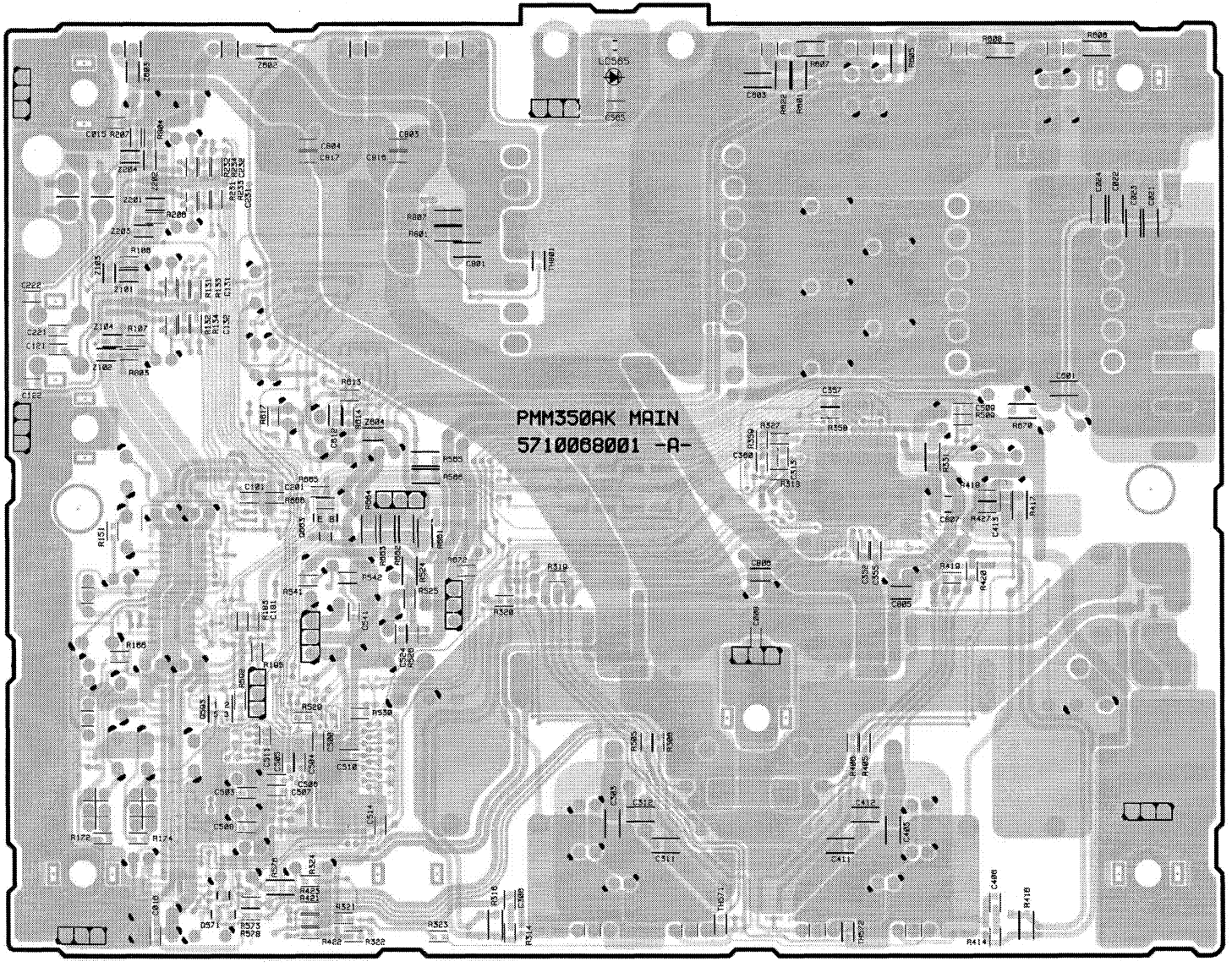
Orange Color Pattern:Component Side Pattern
Blue Color Pattern:Foil Side Pattern

1 2 3 4 5

A B C D E F G

Parts Layout on P.W.Boards and Wiring Diagram (2/2)

MAIN P.W.Board (Foil Side View)



Orange Color Pattern:Component Side Pattern
Blue Color Pattern:Foil Side Pattern

1 2 3 4 5

A B C D E F G

Terminal Voltage of IC/TR

IC100	
1	4.5m
2	5.7m
3	5.1m
4	15.35
5	5.1m
6	5.1m
7	5.2m
8	15.11

IC101	
1	1.2m
2	5.0m
3	3.4m
4	-15.35
5	1.7m
6	3.0m
7	13.3m
8	15.10

IC102	
1	11.0m
2	11.0m
3	10.9m
4	-15.35
5	1.0m
6	1.6m
7	13.0m
8	15.10

IC103	
1	14.8m
2	11.1m
3	13.4m
4	-15.35
5	7.5m
6	7.8m
7	7.9m
8	15.10

IC104	
1	15.8m
2	15.8m
3	15.3m
4	-15.37
5	16.3m
6	16.4m
7	16.5m
8	15.10

IC105	
1	7.2m
2	7.1m
3	6.9m
4	-15.36
5	0.7m
6	-0.1m
7	-5.2m
8	15.10

IC200	
1	6.3m
2	5.3m
3	5.6m
4	-15.36
5	5.0m
6	5.1m
7	5.1m
8	15.01

IC301							
1	N.C	17	0.59	33	N.C	49	1.0m
2	N.C	18	0.59	34	0.0m	50	0.0m
3	N.C	19	N.C	35	NC	51	NC
4	0.59	20	N.C	36	1.94	52	55.80
5	0.59	21	0.33	37	N.C	53	0.0m
6	N.C	22	0.33	38	1.21	54	11.3m
7	0.59	23	0.33	39	N.C	55	41.9m
8	0.59	24	0.31	40	1.21	56	2.8m
9	0.58	25	0.33	41	N.C	57	0.5m
10	0.0m	26	0.33	42	0.60	58	0.33
11	N.C	27	0.40	43	N.C	59	0.33
12	0.59	28	1.21	44	N.C	60	0.30
13	0.59	29	1.21	45	2.0m	61	0.33
14	0.59	30	1.21	46	1.0m	62	0.33
15	0.25	31	1.21	47	NC	63	0.33
16	N.C	32	0.0m	48	N.C	64	0.33

IC302	
1	5.00
2	0.34
3	0.32
4	0.33
5	0.33
6	0.33
7	4.99
8	0.0m

IC501							
1	4.99	12	4.99	23	0.57	34	4.99
2	4.99	13	4.07m	24	0.50	35	33.9m
3	4.99	14	4.97	25	3.1m	36	4.99
4	4.99	15	1.82	26	3.2m	37	4.99
5	4.99	16	20.70	27	5.00	38	4.99
6	1.94	17	3.09m	28	3.60	39	43.2m
7	4.99	18	4.11	29	4.99	40	4.99
8	4.99	19	3.36	30	4.99	41	2.8m
9	4.99	20	6.25	31	4.99	42	2.8m
10	4.99	21	3.25	32	0.37	43	0.5m
11	4.99	22	3.25	33	5.3m	44	8.2m

IC521	
1	4.97
2	4.68
3	3.1m
4	N.C
5	3.1m

IC522	
1	5.00
2	8.03
3	2.9m
4	N.C
5	2.9m

IC551	
1	2.6m
2	2.6m
3	0.0m
4	3.3m
5	0.0m
6	2.7m
7	1.4m
8	1.1m

IC601							
1	54.9m	5	-3.4m	9	0m	13	0.9m
2	4.56	6	0.5m	10	0m	14	0.9m
3	4.56	7	0.5m	11	0.45	15	0.9m
4	0.5m	8	0.45	12	0.45	16	0.5m

IC602	
1	13.66
2	2.9m
3	5.00

IC605	
1	25.35
2	0.7m
3	15.10

IC606	
1	0.6m
2	-24.94
3	-15.35

	G	D	S		G	D	S
Q 301	21.45	-87.6m	25.34	Q 601	0.27	14.37	0.85m
Q 302	-21.09	-87.6m	-24.93	Q 602	0.27	14.37	0.8m
Q 401	21.44	-80.8m	25.34	Q 603	0.27	14.37	0.9m
Q 402	-21.09	-82m	-24.9	Q 604	0.27	14.37	0.84m

	B	C	E		B	C	E
Q 551	0.75m	4.99	0.78m	Q 592	0.7	0.75m	1.1m
Q 561	4.87	0.21	5.05	Q 663	0.73	113.9m	3.1m
Q 581	16.3	5.17m	0.72m	Q 664	13.67	14.36	14.37
Q 582	-8.98	-24.8	-24.9	Q 671	13.66	14.33	14.37
Q 584	1.0m	4.99	0.7m	Q 672	0.67	54.8m	2.4m

	1	2	3	4	5
Q 593	NC	3.60	15.10	15.07	23.5m

[Measuring Conditions]

1.Power Supply Voltage : DC14.4V
2.Measuring Meter : Digital Multi Meter
3.Measuring Point Reference : Between GND
4.Measuring Condition : No signal input

Description of IC Terminal

TCP87P47U : IC501

No.	Symbol	I/O	Terminal Description
1	SHT-DET1(PULL-UP)	-	Pull-up connect terminal.
2	SHT-DET2(PULL-UP)		
3	SHT-DET3(PULL-UP)		
4	DATA IN2(PULL-UP)		
5	CUR-DET1(PULL-UP)		
6	CUR-DET2	I	Over current detect 2 terminal.
7	CUR-DET3(PULL-UP)	-	Pull-up connect terminal.
8	CUR-DET4(PULL-UP)		
9	DC-DET1(PULL-UP)		
10	DC-DET2(PULL-UP)		
11	DC-DET3(PULL-UP)		
12	DC-DET4	I	DC Offset detect 4 terminal.
13	TEST	I	Test terminal.
14	RESET	I	Reset terminal.
15	XIN	I	Crystal OSC connect terminal.
16	XOUT	O	
17	VSS	I	GND connect terminal of A/D converter.
18	VAREF	I	Analog standard voltage terminal.
19	AD VOLT	I	Voltage signal input terminal.
20	AD THRM1	I	Temperature signal input terminal. (u-COM)
21	AD THRM2	I	Temperature signal input terminal. (transformer)
22	VCC REF	I	Output standard voltage terminal of Transformer.
23	TH-DET1	I	Temperature detect 1 terminal.
24	TH-DET2	I	Temperature detect 2 terminal.
25	TH-DET3(GND)	-	GND connect terminal.
26	TH-DET4(GND)		
27	WATCH DOG (PULL-UP)	-	Pull-up connect terminal.
28	DATA OUT(-6dB)	O	-6dB MUTE circuit control terminal.
29	DATA IN1(PULL-UP)	-	Pull-up connect terminal.
30	AMP STATE	I	AMP state detect interrupt input terminal.
31	DATA IN(MUTE) (PULL-UP)	-	Pull-up connect terminal.
32	DATA IN(-6dB) (PULL-DOWN)	-	Pull-down connect terminal.
33	DATA OUT	O	Power supply circuit control terminal.
34	LED RED(PULL-UP)	-	Pull-up connect terminal.
35	DATA OUT(MUTE) (PULL-UP)		
36	TRIGGER IN (PULL-UP)		
37	BAT_DET	I	BAT-DET terminal.
38	SHT-DET4(PULL-UP)	-	Pull-up connect terminal.
39	PWM MUTE	O	PWM MUTE terminal.
40	VDD	I	Power supply terminal. (4.5 to 5.5V)
41	494 CONT	O	PWM IC(uPC494GS) control terminal.
42	PWM ST-BY	O	PWM STAND-BY terminal.
43	LED BLUE(GND)	-	GND connect terminal.
44	VOLT-DET	I	Output voltage detect terminal of Transformer.

Description of IC Terminal

TCP87P47U : IC501

No.	Symbol	I/O	Terminal Description
1	SHT-DET1(PULL-UP)	-	Pull-up connect terminal.
2	SHT-DET2(PULL-UP)		
3	SHT-DET3(PULL-UP)		
4	DATA IN2(PULL-UP)		
5	CUR-DET1(PULL-UP)		
6	CUR-DET2	I	Over current detect 2 terminal.
7	CUR-DET3(PULL-UP)	-	Pull-up connect terminal.
8	CUR-DET4(PULL-UP)		
9	DC-DET1(PULL-UP)		
10	DC-DET2(PULL-UP)		
11	DC-DET3(PULL-UP)		
12	DC-DET4	I	DC Offset detect 4 terminal.
13	TEST	I	Test terminal.
14	RESET	I	Reset terminal.
15	XIN	I	Crystal OSC connect terminal.
16	XOUT	O	
17	VSS	I	GND connect terminal of A/D converter.
18	VAREF	I	Analog standard voltage terminal.
19	AD VOLT	I	Voltage signal input terminal.
20	AD THRM1	I	Temperature signal input terminal. (u-COM)
21	AD THRM2	I	Temperature signal input terminal. (transformer)
22	VCC REF	I	Output standard voltage terminal of Transformer.
23	TH-DET1	I	Temperature detect 1 terminal.
24	TH-DET2	I	Temperature detect 2 terminal.
25	TH-DET3(GND)	-	GND connect terminal.
26	TH-DET4(GND)		
27	WATCH DOG (PULL-UP)	-	Pull-up connect terminal.
28	DATA OUT(-6dB)	O	-6dB MUTE circuit control terminal.
29	DATA IN1(PULL-UP)	-	Pull-up connect terminal.
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32	DATA IN(-6dB) (PULL-DOWN)	-	Pull-down connect terminal.
33	DATA OUT	O	Power supply circuit control terminal.
34	LED RED(PULL-UP)	-	Pull-up connect terminal.
35	DATA OUT(MUTE) (PULL-UP)		
36	TRIGGER IN (PULL-UP)		
37	BAT_DET	I	BAT-DET terminal.
38	SHT-DET4(PULL-UP)	-	Pull-up connect terminal.
39	PWM MUTE	O	PWM MUTE terminal.
40	VDD	I	Power supply terminal. (4.5 to 5.5V)
41	494 CONT	O	PWM IC(uPC494GS) control terminal.
42	PWM ST-BY	O	PWM STAND-BY terminal.
43	LED BLUE(GND)	-	GND connect terminal.
44	VOLT-DET	I	Output voltage detect terminal of Transformer.

MRP-M350

Cabinet Assembly Parts List

Note : The part that has not PART NUMBER will not be supplied.

1	----------	MAIN HEAT SINK
2	----------	CHAS,FRONT
3	----------	CHAS,REAR
4	----------	COVER,BOTTOM
5	03E09416S10	SCR M3X8(P)TPG-TPT(BLK)
6	03E23705S01	SCR M2X6(P)TPG-TPT(BLK)
7	03E29347S01	SCR M3x11(W)TPG-TPT(YEL)
8	03E33357S01	SCR M3X7(B)TPG-TPT(BLK)
9	03E20919S01	SCR M3X8(B)TPG-TPT(BLK)
10	03E20077S01	SCR M3X6(B)TPG-TPT(BLK)
11	03E22133S01	SCR M2.6X6(B)MCH-TPT(BLK)
12	03E34938S01	SCR M3X11(B)MCH-TPT(BLK)
13	03E34939S01	WRENCH BOLT M2.6X11(WHT)
14	----------	BADGE, PLATE
15	----------	BADGE,V-POWER
16	----------	SUPPORT PCB
17	61E34941S01	LENS,LED
18	29E34942S01	LEG,MTG
19	07E35116S01	BKT,TR
20	15E35117S01	HOLDER,LED (B)
21	75E35118S01	SIL PAD 800SAC(80X23)
22	75E35119S01	SIL PAD 800SAC(65X23)
23	07E27744S01	BKT, GND-(A)
24	07E27745S01	BKT, GND-(B)
25	07E35120S01	BKT,GND
26	----------	LUG,GND
27	15E27865S01	FUSE HOLDER
28	75T65628Y01	TC-600HSL 4-15-15
30	----------	LUG,GND TERMINAL-RD

Electrical Parts List

*******MAIN P.W.Board		
########IC's		
IC100	51E22130S01	IC, NJM 4560M-TE3
IC101	51E22130S01	IC, NJM 4560M-TE3
IC102	51E22130S01	IC, NJM 4560M-TE3
IC103	51E22130S01	IC, NJM 4560M-TE3
IC104	51E22130S01	IC, NJM 4560M-TE3
IC105	51E22130S01	IC, NJM 4560M-TE3
IC200	51E22130S01	IC, NJM 4560M-TE3
IC301	51T65327Y01	TDA7570
IC302	51E23843S01	IC,NJM2903M-TE3
IC501	51T55543Y01	OTP,TCP87P47U-QP
IC521	51T65016Y30	IC S-80942CNMC-T2-CP
IC522	51T65016Y31	IC S-80943CNMC-T2-CP
IC551	51E22130S01	IC, NJM 4560M-TE3
IC601	51E27890S01	IC,uPC 494GS
IC602	51E33670S01	IC, NJM78L05A-NB
IC605	51E35123S01	IC REG NJM7815FA-T0220F
IC606	51E35124S01	IC REG NJM7915FA-T0220F
########Transistors/FET's		
Q301	48E33317S01	FET,IRF5305
Q302	48E29536S01	FET,IRFZ 44N
Q401	48E33317S01	FET,IRF5305
Q402	48E29536S01	FET,IRFZ 44N
Q551	48E22902S01	TR,2SC2412K-Q,R,S-T146-CP
Q561	48E22092S01	TR,DTA 124EK-T146-CP
Q581	48E10426S01	TR,DTC 124EK-T146-CP
Q582	48E10426S01	TR,DTC 124EK-T146-CP
Q584	48E33333S01	TR,DTC 114YK-T-106-CP
Q592	48E31104S01	TR,KTC2874-B-RD
Q593	48E11274S01	TR,FMC2-T-149-CP
Q601	48E29536S01	FET,IRFZ 44N
Q602	48E29536S01	FET,IRFZ 44N
Q603	48E29536S01	FET,IRFZ 44N
Q604	48E29536S01	FET,IRFZ 44N
Q663	48E22902S01	TR,2SC2412K-Q,R,S-T146-CP
Q664	48E23853S01	TR,2SB 1243Q-TV4-RD
Q671	48E28010S01	TR,2SB 1238Q-TL4-RD
Q672	48E22902S01	TR,2SC2412K-Q,R,S-T146-CP
########Diodes		
D001	48T68828F11	DIO,1SS133-RH
D002	48T68828F11	DIO,1SS133-RH
D301	48T68828F11	DIO,1SS133-RH
D521	48T68828F11	DIO,1SS133-RH
D551	48E10945S01	DIO,DAN 202K-T-146-CP
D571	48E10945S01	DIO,DAN 202K-T-146-CP
D572	48T68828F11	DIO,1SS133-RH
D581	48E10945S01	DIO,DAN 202K-T-146-CP
D583	48T68828F11	DIO,1SS133-RH
D601	48T84052F11	DIO SI 11ES2-TB5-R5
D602	48T84052F11	DIO SI 11ES2-TB5-R5
D801	48E35122S01	DIO,FFPF15U20DN

D802	48E35121S01	DIO,FFPF15U20DP
ZD521	48T25766W46	DIO,ZEN HZS 15-2L-R5
ZD541	48T25801W11	DIO,ZEN,HZS 5BLL-R5
ZD551	48T52766W14	DIO,ZEN,HZS 7B2LRX
ZD561	48T25766W24	DIO,ZEN HZS 9C1L-R5
ZD562	48T25766W24	DIO,ZEN HZS 9C1L-R5
ZD671	48T25766W01	DIO,ZEN,HZS 6A1L-R5
#######Filters		
Z101	91T15509Y08	EMI,BX1608HM102-CP
Z102	91T15509Y08	EMI,BX1608HM102-CP
Z103	91T15509Y08	EMI,BX1608HM102-CP
Z104	91T15509Y08	EMI,BX1608HM102-CP
Z201	91T15509Y08	EMI,BX1608HM102-CP
Z202	91T15509Y08	EMI,BX1608HM102-CP
Z203	91T15509Y08	EMI,BX1608HM102-CP
Z204	91T15509Y08	EMI,BX1608HM102-CP
Z602	91T65112W04	EMI,BK2125 HS601-CP
Z603	91T65112W04	EMI,BK2125 HS601-CP
Z604	91T65112W04	EMI,BK2125 HS601-CP
#######Coils		
L301	24E33319S01	CHOKE COIL T106-2(15uH)
L306	25T55559Y01	CHOKE SBC6-1R0-962
L401	24E33319S01	CHOKE COIL T106-2(15uH)
L406	25T55559Y01	CHOKE SBC6-1R0-962
#######Thermistors		
TH531	48T25250Y06	TMT,ERTJ1VR223G-CP
TH571	48T25250Y01	TMT ERTJ1VV104J-CP
TH572	48T25250Y01	TMT ERTJ1VV104J-CP
TH801	48T25250Y06	TMT,ERTJ1VR223G-CP
#######Transfomers		
L601	24E35126S01	CHOKE TRANS,EER2825U 40A-X
T801	25E35125S01	POWER TRANS,EI (4T/8T)
#######Crystal		
CL501	91T45281Y04	OSC,CER CSTCR7M70-E1
#######LED		
LD565	48E35139S01	LED,BLUE 2012-CP
#######Capacitors		
C007	08E31820S01	CAP,CER 104-K-B1E-CP
C008	08E28771S01	CAP,CER 103-K-B1H-CP
C011	08S45539Y01	CAP,CER 102KX7R2J-CP
C012	08S45539Y01	CAP,CER 102KX7R2J-CP
C015	08E33110S01	CAP,CER 102-K-B1H-CP
C016	08E33110S01	CAP,CER 102-K-B1H-CP
C021	08S45539Y04	CAP, CER 103KX7R2J-CP
C022	08S45539Y04	CAP, CER 103KX7R2J-CP
C023	08T95420W01	CAP CER, 101K-R2J
C024	08T95420W01	CAP CER, 101K-R2J
C101	08E33395S01	CAP,CER 47R-J-CH1H-CP
C102	08E33395S01	CAP,CER 47R-J-CH1H-CP
C121	08E33110S01	CAP,CER 102-K-B1H-CP
C122	08E33110S01	CAP,CER 102-K-B1H-CP
C131	08E33110S01	CAP,CER 102-K-B1H-CP
C132	08E33110S01	CAP,CER 102-K-B1H-CP
C141	08E33330S01	CAP,CER 33R-J-CH1H-CP
C142	08E32054S01	CAP,CER 10R-D-CH1H-CP
C151	08E22435S01	CAP,TF,MMTS 104-J-RD
C152	08E22435S01	CAP,TF,MMTS 104-J-RD

C161	08E22936S01	CAP,TF,MMTS 223-J-RD
C162	08E32054S01	CAP,CER 10R-D-CH1H-CP
C171	08E20991S01	CAP,TF,MMTS 124-J-RD
C172	08E20756S01	CAP,TF,MMTS,154-J-RD
C173	08E27616S01	CAP,TF,MMTS 334-J-RD
C174	08E22524S01	CAP,TF,MMTS 563-J-RD
C181	08E33395S01	CAP,CER 47R-J-CH1H-CP
C182	08E33395S01	CAP,CER 47R-J-CH1H-CP
C201	08E33395S01	CAP,CER 47R-J-CH1H-CP
C202	08E33395S01	CAP,CER 47R-J-CH1H-CP
C221	08E33110S01	CAP,CER 102-K-B1H-CP
C222	08E33110S01	CAP,CER 102-K-B1H-CP
C231	08E33110S01	CAP,CER 102-K-B1H-CP
C232	08E33110S01	CAP,CER 102-K-B1H-CP
C301	08E25317S01	CAP,TF,MMTS 474-J-RD
C302	08E33316S01	CAP MMH 105-J-M(100V)
C303	08S45539Y05	CAP,CER 152KX7R2J-CP
C304	08S55504Y01	CAP,CER 334 MX7R2A-CP
C305	08E33110S01	CAP,CER 102-K-B1H-CP
C306	08E33110S01	CAP,CER 102-K-B1H-CP
C307	08S45539Y01	CAP,CER 102KX7R2J-CP
C311	08S45539Y01	CAP,CER 102KX7R2J-CP
C312	08S45539Y01	CAP,CER 102KX7R2J-CP
C313	08E32217S01	CAP,CER 272-K-B1H-CP
C321	08E31169S01	CAP,CER 121-J-SL1H-CP
C351	08E31820S01	CAP,CER 104-K-B1E-CP
C352	08E31820S01	CAP,CER 104-K-B1E-CP
C353	08E31820S01	CAP,CER 104-K-B1E-CP
C354	08E31820S01	CAP,CER 104-K-B1E-CP
C355	08E31820S01	CAP,CER 104-K-B1E-CP
C356	08E31820S01	CAP,CER 104-K-B1E-CP
C357	08E31820S01	CAP,CER 104-K-B1E-CP
C359	08E31820S01	CAP,CER 104-K-B1E-CP
C360	08E25236S01	CAP,CER.21-X7R-224-Z-CP
C361	08E26532S01	CAP,CER.21-X7R-104-K-CP
C366	08E26532S01	CAP,CER.21-X7R-104-K-CP
C401	08E25317S01	CAP,TF,MMTS 474-J-RD
C402	08E33316S01	CAP MMH 105-J-M(100V)
C403	08S45539Y05	CAP,CER 152KX7R2J-CP
C404	08S55504Y01	CAP,CER 334 MX7R2A-CP
C405	08E33110S01	CAP,CER 102-K-B1H-CP
C406	08E33110S01	CAP,CER 102-K-B1H-CP
C407	08S45539Y01	CAP,CER 102KX7R2J-CP
C411	08S45539Y01	CAP,CER 102KX7R2J-CP
C412	08S45539Y01	CAP,CER 102KX7R2J-CP
C413	08E32217S01	CAP,CER 272-K-B1H-CP
C421	08E31169S01	CAP,CER 121-J-SL1H-CP
C500	08E31820S01	CAP,CER 104-K-B1E-CP
C503	08E31820S01	CAP,CER 104-K-B1E-CP
C504	08E31820S01	CAP,CER 104-K-B1E-CP
C505	08E31820S01	CAP,CER 104-K-B1E-CP
C506	08E31820S01	CAP,CER 104-K-B1E-CP
C507	08E31820S01	CAP,CER 104-K-B1E-CP
C508	08E31820S01	CAP,CER 104-K-B1E-CP
C509	08E31820S01	CAP,CER 104-K-B1E-CP
C510	08E31820S01	CAP,CER 104-K-B1E-CP
C511	08E28771S01	CAP,CER 103-K-B1H-CP

C512	08E31820S01	CAP,CER 104-K-B1E-CP
C513	08E31820S01	CAP,CER 104-K-B1E-CP
C514	08E31820S01	CAP,CER 104-K-B1E-CP
C521	08E32300S01	CAP,CER 682-K-B1H-CP
C522	08E31820S01	CAP,CER 104-K-B1E-CP
C523	08E31819S01	CAP,CER 273-K-B1E-CP
C524	08E28771S01	CAP,CER 103-K-B1H-CP
C526	08E28771S01	CAP,CER 103-K-B1H-CP
C532	08E31820S01	CAP,CER 104-K-B1E-CP
C541	08E28771S01	CAP,CER 103-K-B1H-CP
C551	08E31820S01	CAP,CER 104-K-B1E-CP
C552	08E31820S01	CAP,CER 104-K-B1E-CP
C565	08E33110S01	CAP,CER 102-K-B1H-CP
C601	08S45539Y04	CAP, CER 103KX7R2J-CP
C603	08S45539Y02	CAP,CER,222KX7R2J-CP
C604	08S45539Y02	CAP,CER,222KX7R2J-CP
C611	08E27842S01	CAP,TF,AMCS 122-J-RD
C612	08E31991S01	CAP,CER 222-K-B1H-CP
C671	08E33110S01	CAP,CER 102-K-B1H-CP
C801	08S45539Y02	CAP,CER,222KX7R2J-CP
C802	08S45539Y02	CAP,CER,222KX7R2J-CP
C803	08E32209S01	CAP,CER 153-K-B1H-CP
C804	08E32209S01	CAP,CER 153-K-B1H-CP
C805	08E26532S01	CAP,CER.21-X7R-104-K-CP
C806	08E26532S01	CAP,CER.21-X7R-104-K-CP
C807	08S55504Y01	CAP,CER 334 MX7R2A-CP
C816	08E33110S01	CAP,CER 102-K-B1H-CP
C817	08E33110S01	CAP,CER 102-K-B1H-CP
C823	08E33110S01	CAP,CER 102-K-B1H-CP
C824	08E33110S01	CAP,CER 102-K-B1H-CP
E101	23E33350S01	CAP,ELEC,SHL 10/50-M-RD
E102	23E33350S01	CAP,ELEC,SHL 10/50-M-RD
E151	23E33664S01	CAP,ELEC,SHL 0.47/50-M-RD
E161	23E33398S01	CAP,ELEC,SHL 2.2/50-M-RD
E183	23T25216Y04	CAP,HP10R-1C-BP-E3
E184	23T25216Y04	CAP,HP10R-1C-BP-E3
E185	23T25216Y04	CAP,HP10R-1C-BP-E3
E186	23T25216Y04	CAP,HP10R-1C-BP-E3
E201	23E33350S01	CAP,ELEC,SHL 10/50-M-RD
E202	23E33350S01	CAP,ELEC,SHL 10/50-M-RD
E301	23E35142S01	CAP,LXV 10/100-M-RD
E302	23E35142S01	CAP,LXV 10/100-M-RD
E303	23E35142S01	CAP,LXV 10/100-M-RD
E331	23E33341S01	CAP,ELEC,1/50-M-RD
E361	23E33341S01	CAP,ELEC,1/50-M-RD
E362	23E33341S01	CAP,ELEC,1/50-M-RD
E401	23E35142S01	CAP,LXV 10/100-M-RD
E402	23E35142S01	CAP,LXV 10/100-M-RD
E403	23E35142S01	CAP,LXV 10/100-M-RD
E503	23E31019S01	CAP,ELEC,SHL 100/10-M-RD
E507	23E31019S01	CAP,ELEC,SHL 100/10-M-RD
E508	23E31019S01	CAP,ELEC,SHL 100/10-M-RD
E601	23E33880S01	CAP,ELEC,100/25-M-RD
E602	23E33287S01	CAP,ELEC,47/25-M-RD
E603	23E33287S01	CAP,ELEC,47/25-M-RD
E641	23E35141S01	CAP,ELEC,SHL 330/25-M-RD
E642	23E33287S01	CAP,ELEC,47/25-M-RD

E661	23E35141S01	CAP,ELEC,SHL 330/25-M-RD
E801	23T65601Y03	CAP,KY 272-1V-M31(35V)
E802	23T65601Y03	CAP,KY 272-1V-M31(35V)
E803	23T65601Y03	CAP,KY 272-1V-M31(35V)
E804	23T65601Y03	CAP,KY 272-1V-M31(35V)
E809	23E33840S01	CAP,ELEC,22/50-M-RD
E810	23E33840S01	CAP,ELEC,22/50-M-RD
E811	23E35142S01	CAP,LXV 10/100-M-RD
E813	23E33347S01	CAP,ELEC,SHL 220/16-M-RD
E814	23E33347S01	CAP,ELEC,SHL 220/16-M-RD
E815	23E35140S01	CAP,ELEC,SHL 1/50-M-RD
E816	23E35140S01	CAP,ELEC,SHL 1/50-M-RD
E817	23E35140S01	CAP,ELEC,SHL 1/50-M-RD
E818	23E35140S01	CAP,ELEC,SHL 1/50-M-RD
E6001	23T65601Y01	CAP,KY 102-1E-J30
E6002	23T65601Y01	CAP,KY 102-1E-J30
E6003	23T65601Y01	CAP,KY 102-1E-J30
E6004	23T65601Y01	CAP,KY 102-1E-J30
E6005	23T65601Y01	CAP,KY 102-1E-J30
#######Resistors		
L302	06E28624S01	RES,CF,0R0-J-1/16-CP
L303	06E28624S01	RES,CF,0R0-J-1/16-CP
L402	06E28624S01	RES,CF,0R0-J-1/16-CP
L403	06E28624S01	RES,CF,0R0-J-1/16-CP
R003	06E28624S01	RES,CF,0R0-J-1/16-CP
R101	06E33547S01	RES,CF,153-F-1/16-CP
R102	06E33547S01	RES,CF,153-F-1/16-CP
R103	06E33547S01	RES,CF,153-F-1/16-CP
R104	06E33547S01	RES,CF,153-F-1/16-CP
R105	06E28535S01	RES,CF,223-J-1/16-CP
R106	06E32035S01	RES,CF,113-J-1/16-CP
R107	06E32035S01	RES,CF,113-J-1/16-CP
R109	06E28790S01	RES,CF,562-J-1/16-CP
R131	06E28533S01	RES,CF,102-J-1/16-CP
R132	06E28533S01	RES,CF,102-J-1/16-CP
R133	06E28537S01	RES,CF,104-J-1/16-CP
R134	06E28537S01	RES,CF,104-J-1/16-CP
R135	06E28624S01	RES,CF,0R0-J-1/16-CP
R136	06E28624S01	RES,CF,0R0-J-1/16-CP
R142	06E31152S01	RES,CF,152-J-1/16-CP
R143	06E32033S01	RES,CF,911-J-1/16-CP
R145	06E31163S01	RES,CF,224-J-1/16-CP
R146	06E28794S01	RES,CF,273-J-1/16-CP
R151	06E31161S01	RES,CF,563-J-1/16-CP
R152	06E28535S01	RES,CF,223-J-1/16-CP
R161	06E31156S01	RES,CF,512-J-1/16-CP
R162	06E31156S01	RES,CF,512-J-1/16-CP
R163	06E31148S01	RES,CF,101-J-1/16-CP
R164	06E31156S01	RES,CF,512-J-1/16-CP
R165	06E31152S01	RES,CF,152-J-1/16-CP
R166	06E31683S01	RES,CF,154-J-1/16-CP
R171	06E28790S01	RES,CF,562-J-1/16-CP
R172	06E28790S01	RES,CF,562-J-1/16-CP
R173	06E28790S01	RES,CF,562-J-1/16-CP
R174	06E28790S01	RES,CF,562-J-1/16-CP
R175	06E28794S01	RES,CF,273-J-1/16-CP
R181	06E28790S01	RES,CF,562-J-1/16-CP

R183	06E28555S01	RES,CF,153-J-1/16-CP
R184	06E28555S01	RES,CF,153-J-1/16-CP
R185	06E28555S01	RES,CF,153-J-1/16-CP
R190	06E33392S01	RES,CF,821-J-1/16-CP
R191	06E33392S01	RES,CF,821-J-1/16-CP
R192	06E28534S01	RES,CF,103-J-1/16-CP
R193	06E28534S01	RES,CF,103-J-1/16-CP
R195	06E28790S01	RES,CF,562-J-1/16-CP
R201	06E33547S01	RES,CF,153-F-1/16-CP
R202	06E33547S01	RES,CF,153-F-1/16-CP
R203	06E33547S01	RES,CF,153-F-1/16-CP
R204	06E33547S01	RES,CF,153-F-1/16-CP
R205	06E28535S01	RES,CF,223-J-1/16-CP
R206	06E32035S01	RES,CF,113-J-1/16-CP
R207	06E32035S01	RES,CF,113-J-1/16-CP
R209	06E28790S01	RES,CF,562-J-1/16-CP
R231	06E28533S01	RES,CF,102-J-1/16-CP
R232	06E28533S01	RES,CF,102-J-1/16-CP
R233	06E28537S01	RES,CF,104-J-1/16-CP
R234	06E28537S01	RES,CF,104-J-1/16-CP
R235	06E28624S01	RES,CF,0R0-J-1/16-CP
R236	06E28624S01	RES,CF,0R0-J-1/16-CP
R301	06E33312S01	RES,MO,10-J-2W-S
R302	06E33313S01	RES,MO,27-J-2W-S
R303	06E33314S01	RES RW 0.01R-J-5W
R304	06E33314S01	RES RW 0.01R-J-5W
R305	06E31148S01	RES,CF,101-J-1/16-CP
R306	06E31148S01	RES,CF,101-J-1/16-CP
R313	06E35128S01	RES,CF,43R-J-1/16-CP
R314	06E35134S01	RES,CF,56R-J-1/16-CP
R315	06E22113S01	RES,CF, 22R-J1/4-CP
R316	06E22114S01	RES,CF, 27R-J-1/4-CP
R317	06E35127S01	RES,CF 472-F-1/4-CP
R318	06E33235S01	RES,CF,102-F-1/16-CP
R319	06E28537S01	RES,CF,104-J-1/16-CP
R320	06E28537S01	RES,CF,104-J-1/16-CP
R321	06E33240S01	RES,CF,124-F-1/16-CP
R322	06E34550S01	RES,CF,272-F-1/16-CP
R323	06E28534S01	RES,CF,103-J-1/16-CP
R324	06E28795S01	RES,CF,333-J-1/16-CP
R325	06E28788S01	RES,CF,122-J-1/16-CP
R326	06E28534S01	RES,CF,103-J-1/16-CP
R327	06E31153S01	RES,CF,222-J-1/16-CP
R331	06E22115S01	RES,CF, 101-J-1/4-CP
R354	06E28534S01	RES,CF,103-J-1/16-CP
R358	06E28534S01	RES,CF,103-J-1/16-CP
R359	06E35136S01	RES CF 2R2-J-1/16-CP
R401	06E33312S01	RES,MO,10-J-2W-S
R402	06E33313S01	RES,MO,27-J-2W-S
R403	06E33314S01	RES RW 0.01R-J-5W
R404	06E33314S01	RES RW 0.01R-J-5W
R405	06E31148S01	RES,CF,101-J-1/16-CP
R406	06E31148S01	RES,CF,101-J-1/16-CP
R413	06E35128S01	RES,CF,43R-J-1/16-CP
R414	06E35134S01	RES,CF,56R-J-1/16-CP
R415	06E22113S01	RES,CF, 22R-J1/4-CP
R416	06E22114S01	RES,CF, 27R-J-1/4-CP

R417	06E35127S01	RES,CF 472-F-1/4-CP
R418	06E33235S01	RES,CF,102-F-1/16-CP
R419	06E28537S01	RES,CF,104-J-1/16-CP
R420	06E28537S01	RES,CF,104-J-1/16-CP
R421	06E33240S01	RES,CF,124-F-1/16-CP
R422	06E34550S01	RES,CF,272-F-1/16-CP
R423	06E28534S01	RES,CF,103-J-1/16-CP
R424	06E28795S01	RES,CF,333-J-1/16-CP
R427	06E31153S01	RES,CF,222-J-1/16-CP
R501	06E28534S01	RES,CF,103-J-1/16-CP
R502	06E28534S01	RES,CF,103-J-1/16-CP
R503	06E28534S01	RES,CF,103-J-1/16-CP
R504	06E28534S01	RES,CF,103-J-1/16-CP
R505	06E28534S01	RES,CF,103-J-1/16-CP
R506	06E28534S01	RES,CF,103-J-1/16-CP
R507	06E33252S01	RES,CF,122-F-1/16-CP
R508	06E28534S01	RES,CF,103-J-1/16-CP
R509	06E28797S01	RES,CF,474-J-1/16-CP
R510	06E28797S01	RES,CF,474-J-1/16-CP
R511	06E28534S01	RES,CF,103-J-1/16-CP
R513	06E28534S01	RES,CF,103-J-1/16-CP
R514	06E28534S01	RES,CF,103-J-1/16-CP
R516	06E28534S01	RES,CF,103-J-1/16-CP
R517	06E28534S01	RES,CF,103-J-1/16-CP
R518	06E28534S01	RES,CF,103-J-1/16-CP
R519	06E28534S01	RES,CF,103-J-1/16-CP
R520	06E28534S01	RES,CF,103-J-1/16-CP
R521	06E28534S01	RES,CF,103-J-1/16-CP
R522	06E28534S01	RES,CF,103-J-1/16-CP
R523	06E28549S01	RES,CF,472-J-1/16-CP
R524	06E24363S01	RES,CF, 472-J-1/4-CP
R525	06E35131S01	RES,CF,393-F-1/16-CP
R526	06E33278S01	RES,CF,563-F-1/16-CP
R527	06E28534S01	RES,CF,103-J-1/16-CP
R528	06E28534S01	RES,CF,103-J-1/16-CP
R529	06E28534S01	RES,CF,103-J-1/16-CP
R530	06E28534S01	RES,CF,103-J-1/16-CP
R531	06E28534S01	RES,CF,103-J-1/16-CP
R532	06E28534S01	RES,CF,103-J-1/16-CP
R533	06E28534S01	RES,CF,103-J-1/16-CP
R541	06E35137S01	RES,CF,392-F-1/16-CP
R542	06E33252S01	RES,CF,122-F-1/16-CP
R551	06E31687S01	RES,CF,103-F-1/16-CP
R552	06E31687S01	RES,CF,103-F-1/16-CP
R553	06E35131S01	RES,CF,393-F-1/16-CP
R554	06E31687S01	RES,CF,103-F-1/16-CP
R555	06E28549S01	RES,CF,472-J-1/16-CP
R556	06E31687S01	RES,CF,103-F-1/16-CP
R557	06E28549S01	RES,CF,472-J-1/16-CP
R558	06E31160S01	RES,CF,473-J-1/16-CP
R559	06E28534S01	RES,CF,103-J-1/16-CP
R561	06E28549S01	RES,CF,472-J-1/16-CP
R562	06E28624S01	RES,CF,0R0-J-1/16-CP
R565	06E23902S01	RES,CF, 242-J-1/4-CP
R566	06E23902S01	RES,CF, 242-J-1/4-CP
R571	06E33253S01	RES,CF,222-F-1/16-CP
R572	06E35129S01	RES,CF,821-F-1/16-CP

R573	06E33254S01	RES,CF,332-F-1/16-CP
R574	06E35129S01	RES,CF,821-F-1/16-CP
R575	06E35129S01	RES,CF,821-F-1/16-CP
R576	06E35133S01	RES,CF 562-F-1/4-CP
R578	06E33254S01	RES,CF,332-F-1/16-CP
R584	06E31160S01	RES,CF,473-J-1/16-CP
R585	06E28534S01	RES,CF,103-J-1/16-CP
R586	06E28534S01	RES,CF,103-J-1/16-CP
R592	06E28534S01	RES,CF,103-J-1/16-CP
R601	06E20545S01	RES,CF, 33R-J-1/4-CP
R602	06E20545S01	RES,CF, 33R-J-1/4-CP
R603	06E33340S01	RES MO-221-J-1W-RD
R604	06E33340S01	RES MO-221-J-1W-RD
R605	06E22071S01	RES,CF 10R-J-1/4-CP
R606	06E22071S01	RES,CF 10R-J-1/4-CP
R607	06E22071S01	RES,CF 10R-J-1/4-CP
R608	06E22071S01	RES,CF 10R-J-1/4-CP
R609	06E33340S01	RES MO-221-J-1W-RD
R610	06E33340S01	RES MO-221-J-1W-RD
R611	06E35130S01	RES,CF,183-F-1/16-CP
R612	06E31687S01	RES,CF,103-F-1/16-CP
R613	06E35138S01	RES,CF,244-F-1/16-CP
R614	06E31158S01	RES,CF,243-J-1/16-CP
R615	06E31809S01	RES,CF,822-F-1/16-CP
R616	06E35132S01	RES,CF,823-F-1/16-CP
R617	06E31806S01	RES,CF,244-J-1/16-CP
R618	06E31809S01	RES,CF,822-F-1/16-CP
R621	06E35132S01	RES,CF,823-F-1/16-CP
R622	06E20545S01	RES,CF, 33R-J-1/4-CP
R623	06E20545S01	RES,CF, 33R-J-1/4-CP
R653	06E28534S01	RES,CF,103-J-1/16-CP
R661	06E23597S01	RES,CF, 182-J-1/4-CP
R662	06E23597S01	RES,CF, 182-J-1/4-CP
R663	06E23597S01	RES,CF, 182-J-1/4-CP
R664	06E23597S01	RES,CF, 182-J-1/4-CP
R665	06E28790S01	RES,CF,562-J-1/16-CP
R666	06E28555S01	RES,CF,153-J-1/16-CP
R670	06E33335S01	RES,CF, 303-J-1/4-CP
R671	06E31159S01	RES,CF,303-J-1/16-CP
R672	06E31160S01	RES,CF,473-J-1/16-CP
R673	06E31182S01	RES,CF, 302-J-1/4-CP
R801	06E22115S01	RES,CF, 101-J-1/4-CP
R802	06E22115S01	RES,CF, 101-J-1/4-CP
R803	06E28786S01	RES,CF,331-J-1/16-CP
R804	06E28786S01	RES,CF,331-J-1/16-CP
R807	06E22115S01	RES,CF, 101-J-1/4-CP
R808	06E22115S01	RES,CF, 101-J-1/4-CP
R809	06E31685S01	RES,CF,105-J-1/16-CP
R810	06E31685S01	RES,CF,105-J-1/16-CP
VR101	18E23672S01	VR 50KAX1 RK0971110 (GAIN)
VR102	18E29403S01	VR, ROTARY 5KEX1 (BASS EQ)
VR103	18E20879S01	VR,20KEX4 RK0971410 (LP FILTER)

Schematic Diagram

MAIN P.W.Board

NOTE:N.U.is Not Used Parts.

INPUT BUFFER

INPUT ISO.

SUBSONIC FILTER

BASS EQ

L.P.F

REVERSE BUFFER

GAIN VOLUME

PWM DRIVER

OUTPUT FET

MUTE DRIVER

VOLTAGE DETECT

CURRENT DETECT

DC OFFSET DETECT

u-COM

SW +B

RESET IC for u-COM

+15V REGULATOR

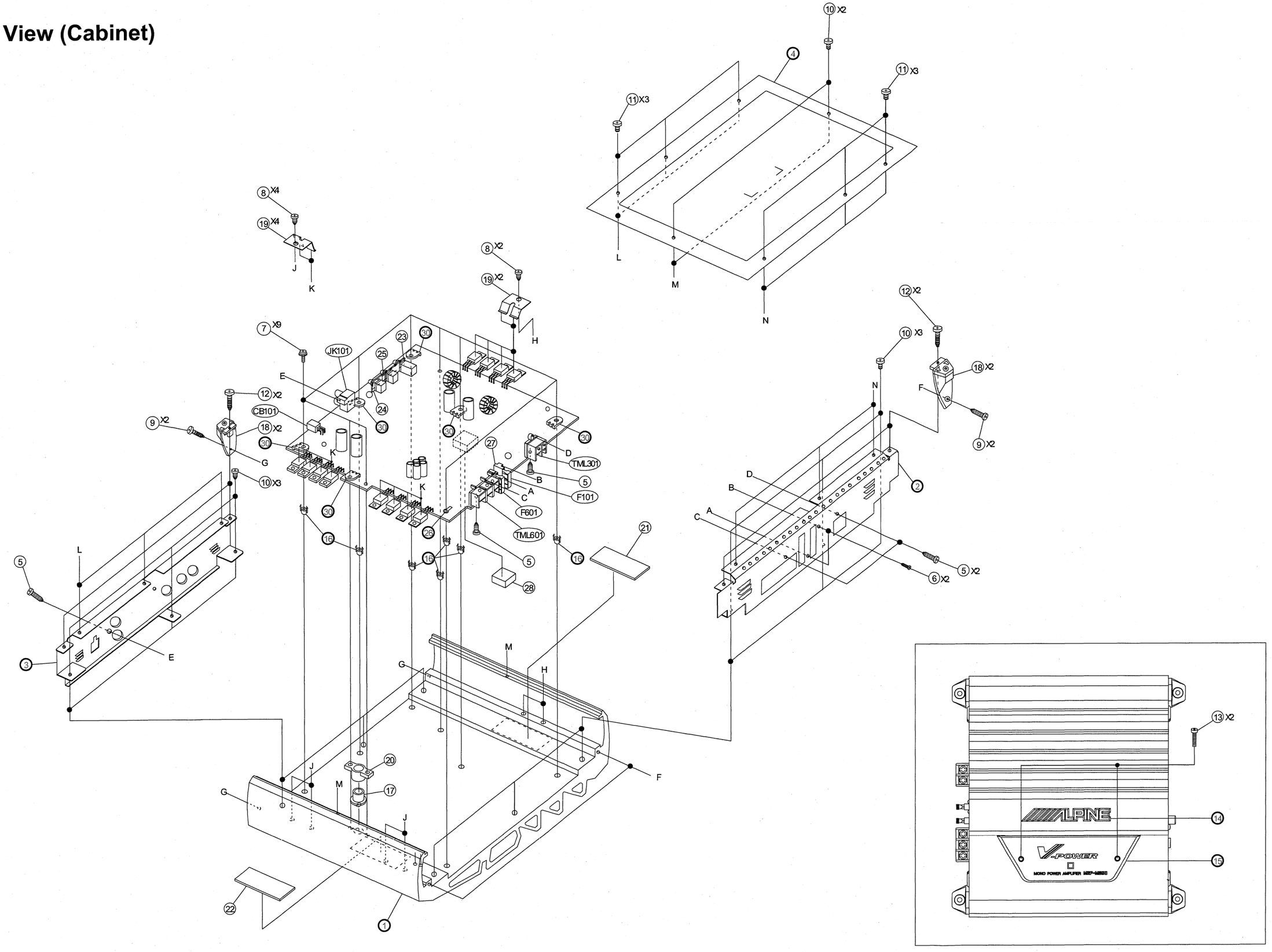
-15V REGULATOR

u-COM +5V

PWM CONTROL CIRCUIT

MAIN POWER CIRCUIT

Exploded View (Cabinet)



*******Miscellaneous

CB101	09E23915S01	TERM HOU 5569-4A1 (SPEAKER LEVEL INPUT)
F101	65E25313S01	FUSE,AUTO 20A(257020) (For Battery Line)
F601	65E25313S01	FUSE,AUTO 20A(257020) (For Battery Line)
JK101	09E33322S01	RCA JACK 02P (INPUT)
TML301	09E33323S01	BLOCK TERMINAL 2P (SPEAKER OUTPUT)
TML601	09E32028S01	FUSE TERMINAL 3P (POWER SUPPLY)